Probability Unit1 Lesson 2 Hook

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Multiple Choice.**

You will most likely not know this material. The point of this activity is to see how many questions you can get right by guessing.

**Solve the equation algebraically.**

1. x(2x+9) = -9 1) \_\_\_\_
   1. 0; -4.5 b. 3; 3 c. -3; -1.5 d. -4.5; 9
2. 4 + x = 1 2) \_\_\_\_
   1. 29 ± 24 b. -9 ± 4 c. 9 - 4 d. 9 ± 4

**Find the domain of the given function.**

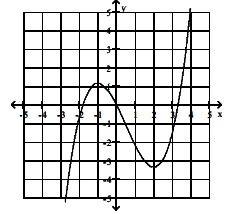
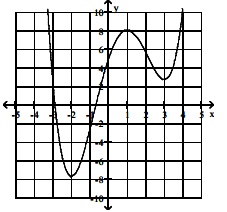
1. f(x) = 3) \_\_\_\_
   1. (-∞, -36) U (-36, 36) U (36, ∞) b. All real numbers

c. (36, ∞) d. (-∞, 6) U (-6, 6) U (6, ∞)

1. f(x) = 4) \_\_\_\_
   1. (0, ∞) b. (-∞, -3) U (-3,-2) U (-2, 5) U (5, ∞)

c. All real numbers d. [-3, -2) ∪ (-2, 5) ∪ (5, ∞)

**Solve the problem.**

1. Use the graph of f to estimate the local maximum and local minimum. 
   1. Local maximum: approx. 1.17; local minimum: approx. -3.33 5) \_\_\_\_
   2. No local maximum, no local minimum
   3. Local Maximum: ∞; local minimum: - ∞
   4. Local maximum: -1; local minimum: 2
2. Use the graph of f to estimate the local maximum and local minimum. 
   1. Local maximum: ∞; local minima: -2 and 3 6) \_\_\_\_
   2. Local maximum: approx. 8.08; local minima: approx. -7.67 and 2.75
   3. Local maximum: 1, local minima: -2 and 3
   4. No local maximum; local minimum: approx. -7.67

**Identify intervals on which the function is increasing, decreasing, or constant.**

1. f(x) = .5 (x + 3)² -5 7) \_\_\_\_
   1. increasing: (3, ∞); decreasing: (-∞,3); constant: (-3,3)
   2. increasing: (-∞, -0.5); decreasing: (0.5, ∞); constant: (-0.5, 0.5)
   3. increasing: (-3, ∞); decreasing: (-∞, -3)
   4. increasing: (-∞, -3); decreasing: (-3, ∞)
2. f(x) = |x-7| - 5 8) \_\_\_\_
   1. Increasing: (-5, ∞); decreasing: (-∞, -5)
   2. Increasing: (7, ∞); decreasing: (-∞, 7)
   3. Increasing: (-7, ∞); decreasing: (-∞, -7)
   4. Increasing: (-∞, 7); decreasing: (7, ∞)

**Find the asymptote(s) of the given function.**

1. f(x) = vertical asymptote(s) 9) \_\_\_\_
   1. x = 2, x= -2 b. x =1 c. x= -1 d. None
2. f(x) = vertical asymptote(s) 10) \_\_\_
   1. x = 5 b. x = -3 c. x = 3, x = -3 d. x = 3
3. f(x) = horizontal asymptote(s) 11) \_\_\_
   1. y = 1 b. None c. y = -7 d. y =7
4. g(x) = horizontal asymptote(s) 12) \_\_\_
   1. y = 0 b. y = -7 c. None d. y= = 1

**Perform the requested operation or operations. Find the domain of each.**

1. f(x) = 4x + 7, g(x) = 2x² 13) \_\_\_

Find (fg) (x).

a. 8x + 14; domain: (-∞, ∞) b. 8x3+ 14x2; domain: (-∞, ∞)

c. 8x2 + 14x; domain: (-∞, ∞) d. 2x2 + 4x + 7; domain: (-∞, ∞)

1. f(x) = , g(x) = 14) \_\_\_

Find (f + g) (x).

a. 6x; domain: (-∞, ∞) b. +; domain: [1, ∞)

c. x; domain: (-∞, ∞) d.; domain: [0, ∞)

**Perform the requested operation or operations.**

1. f(x) = 4x + 10;  g(x) = 4x - 1 15) \_\_\_

Find f (g(x)).

a. f (g(x)) = 16x + 6 b. f (g(x)) = 16x + 9

c. f (g(x)) = 16x + 14 d. f (g(x)) = 16x + 39

1. f(x) = ; g(x) = 8x – 6 16) \_\_\_

Find f (g(x)).

a. f (g(x)) = 8 b. f (g(x)) = 8 – 6

c. f (g(x)) = 2 d. f (g(x)) = 2

**Find functions f and g so that h(x) = f (g(x)).**

1. y = 17) \_\_\_

a. f(x) = 1/x2, g(x) = x - 3 b. f(x) = 1/3, g(x) = x2 - 3

c. f(x) = 1/x, g(x) = x2 – 3 d. f(x) = 1/x2, g(x) = - 1/3

1. y = |2x + 4| 18) \_\_\_

a. f(x) = -|x|, g(x) = 2x + 4 b. f(x) = |-x|, g(x) = 2x – 4

c. f(x) = x, g(x) = 2x + 4 d. f(x) = |x|, g(x) = 2x + 4

**Find the inverse (g(x)) of the function.**

1. f(x) = 19) \_\_\_

a. g(x) = x2 + 6, x ≥ 0 b. Not a one-to-one function

c. g(x) = (x - 6)2 d. g(x) = x + 6

1. f(x) = 20) \_\_\_

a. g(x) = b. g(x) =

c. g(x) = d. Not a one-to-one function

Problems from: <http://myteacherpages.com/webpages/RSlobodnik/files/Precalculus%20Final%20Review.pdf>